PC-HELPER

Signal Conditioner
4-Slots

ESC-4

User's Manual

CONTEC CO.,LTD.

Check Your Package

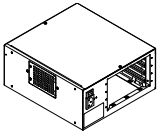
Thank you for purchasing the CONTEC product.

The product consists of the items listed below.

Check, with the following list, that your package is complete. If you discover damaged or missing items, contact your retailer

Product Configuration List

- External Signal Conditioner…1
- Brackets for front slots…3
- Brackets for rear slots…3
- Screws for securing front or rear bracket…12
- Power cable (for 125V)…1
- Clamp for fixing AC cable…1
- Attachment fittings…2
- Screws for attachment fittings…4
- Rubber feet…4
- Screws for attaching rubber feet…4
- User's Manual…1



External Signal Conditioner

Brackets for front slots

Brackets for rear slots

Power cable

Screws for securing front or rear bracket

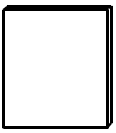
Screws for attachment fittings

Screws for attaching rubber feet

Clamp for fixing AC cable

Attachment fittings

Rubber feet



User's Manual

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1 Before Using the Product

This chapter provides information you should know before using the product.

About the Chassis

This product is a box that can contain up to 4 signal conditioner (signal conversion) boards.

The signal conversion boards can be inserted through the slot-in system for effortless attachment or replacement and easy maintenance.

Various feature enhancements can be achieved by adding or replacing signal conversion boards which are separately available.
For example, SC-AIO1604G unifies the channels by changing the I/O range and/or other things for each of them, and SC-DIO2424S enables switching sync/source by 8-points according to the signal source, allowing a measurement using one board.

Features

- Max. four signal conversion boards can be connected.

You can connect Max. four signal conversion boards (SC-AIO16-4G, SC-DIO2424S).

- Slot-in system facilitating connection of a signal conversion board.

This product uses the slot-in system that makes it easier to connect a signal conversion board without opening the cover of cabinet. Easy maintenance by smooth connection and conversion

- Various feature enhancements can be achieved by replacing signal conversion boards.

By adding or replacing the signal conversion board(s), various feature enhancements according to your needs are possible.

Signal conversion board (Option)

Signal conversion board for analog I/O	: SC-AIO1604G
Signal conversion board for digital I/O	: SC-DIO2424S

Check the CONTEC's Web site for more information on these signal conversion board.

Customer Support

CONTEC provides the following support services for you to use CONTEC products more efficiently and comfortably.

Web Site

Japanese http://www.contec.co.jp/
English http://www.contec.com/
Chinese http://www.contec.com.cn/

Latest product information

CONTEC provides up-to-date information on products.

CONTEC also provides product manuals and various technical documents in the PDF.

Free download

You can download updated driver software and differential files as well as sample programs available in several languages.

Note! For product information

Contact your retailer if you have any technical question about a CONTEC product or need its price, delivery time, or estimate information.

Limited One-Year Warranty

CONTEC products are warranted by CONTEC CO., LTD. to be free from defects in material and workmanship for up to one year from the date of purchase by the original purchaser.
Repair will be free of charge only when this device is returned freight prepaid with a copy of the original invoice and a Return Merchandise Authorization to the distributor or the CONTEC group office, from which it was purchased.
This warranty is not applicable for scratches or normal wear, but only for the electronic circuitry and original products. The warranty is not applicable if the device has been tampered with or damaged through abuse, mistreatment, neglect, or unreasonable use, or if the original invoice is not included, in which case repairs will be considered beyond the warranty policy.

How to Obtain Service

For replacement or repair, return the device freight prepaid, with a copy of the original invoice. Please obtain a Return Merchandise Authorization number (RMA) from the CONTEC group office where you purchased before returning any product.

* No product will be accepted by CONTEC group without the RMA number.

Liability

The obligation of the warrantor is solely to repair or replace the product. In no event will the warrantor be liable for any incidental or consequential damages due to such defect or consequences that arise from Safety Precautions.
Understand the following definitions and precautions to use the product safely.

Safety Precautions

Understand the following definitions and precautions to use the product safely.

Safety Information

This document provides safety information using the following symbols to prevent accidents resulting in injury or death and the destruction of equipment and resources. Understand the meanings of these labels to operate the equipment safely.

⚠ DANGER	DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠ WARNING	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

Handling Precautions

⚠ DANGER

Do not use the product where it is exposed to flammable or corrosive gas. Doing so may result in an explosion, fire, electric shock, or failure.

⚠ CAUTION

- Do not plug or unplug any board into or from the slot with this product powered.
  Doing so may result in a malfunction, overheating, or fault.
  Be sure to turn off this product and unplug their power cables before plugging or unplugging any board.
- Do not plug or unplug the cable interconnecting this product with this product powered.
- This product must always be used standing horizontally.
  Doing so may result in a malfunction, overheating, or fault.
- If a specific slot is recommended for a board, plug the board into that slot. Failure to do so may result in a malfunction, overheating, fault, or damage.
- When plugging or unplugging the power cable, be sure to hold it by the plug itself.
- The power cable used must be compliant to the outlet voltage and plug type.
  (The attached cable is for 125VAC.)
- Since this product is a precision device, do not store or use it where it is subject to shock or vibration. Also avoid any place where this product is exposed to direct sunlight, extremely high humidity, or much dust.
- Do not use or store the chassis where it is exposed to any chemical either directly or as vapor in the air.
- This product has ventilating slits to prevent it from overheating. Avoid using the chassis with the ventilating slits blocked or in an ill-ventilated place.

- Do not use the chassis near equipment generating a strong magnetic field or noise.
  Doing so may result in a malfunction, overheating, fault, or damage in the chassis, your PC, or both.
- It is very dangerous to use this product with water, liquid, or metal (conductive) chips left inside.
  Be careful not to let such foreign matters in this product.
- The specifications of this product are subject to change without notice for enhancement or quality improvement.
  Even when using the product continuously, be sure to read the manual and understand the contents.
- Do not modify this product.
  CONTEC will bear no responsibility for any problems, etc., resulting from modifying the product.
- Regardless of the foregoing statements, CONTEC is not liable for any damages whatsoever (including damages for loss of business profits) arising out of the use of or inability to use this CONTEC product or the information contained herein.

Environment

Use this product in the following environment. If used in an unauthorized environment, the chassis may overheat, malfunction, or cause a failure.

Operating temperature

0 - 50°C

Humidity

20 - 80%RH (No condensation)

Corrosive gases

None

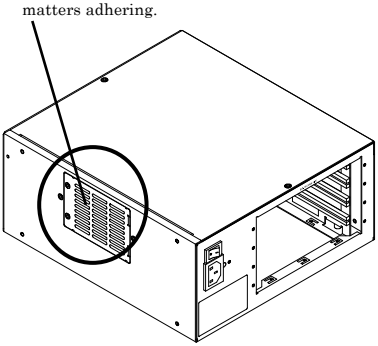
Floating dust particles

Not to be excessive

Inspection

Inspect the product periodically as follows to use it safely.

- Ventilating slits must neither be blocked nor have dust or foreign matters adhering.



Storage

When storing this product, keep it in its original packing form.

(1) Wrap it in the packing material, then put it in the box.

(2) Store the package at room temperature at a place free from direct sunlight, moisture, shock, vibration, magnetism, and static electricity.

Disposal

When disposing of the product, follow the disposal procedures stipulated under the relevant laws and municipal ordinances.

2 Setup

This chapter explains how to set up the chassis.

Refer to the user's manual for the signal conditioner as required.

What is Setup?

Setup means a series of steps to take before the product can be used.

Taking the following steps in this chapter sets up the ESC-4.

Step 1 Preparation

Step 2 Installing the Signal Conditioner

Step 3 Attaching the bracket, power cable, etc.

Step 1 Preparation

Configuration image

Figure 2.1. Configuration image

Items to be prepared

- ESC-4

  This product…(a)
  Brackets for front slots…(b)
  Brackets for rear slots…(c)

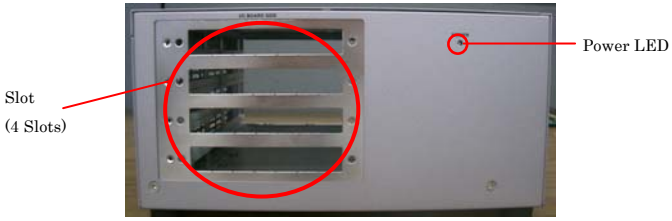
- Signal Conditioner…(d) The photo is of the SC-DIO2424S.

  SC-AIO1604G

  SC-DIO2424S

Names of major parts

Front view



Back view

Figure 2.2. Names of major parts

Step 2 Installing the Signal Conditioner

⚠ CAUTION

- Before installing the signal conditioner on this product, be sure to turn off this product and unplug the power cables from wall outlets at the same time.
- There are switches and jumpers on the signal conditioner that need to be set in advance. Be sure to check these before installing this product.

Follow the procedure below to install the signal conditioner on this product.

(1) Unplug the power cable from this product.

(2) Remove the screws fixing the bracket on front/back side and then remove the bracket.

(3) Insert the board to one of the slots. The slot has the lane along which the board must be slid in.

(4) Fix the front / back side of board with screws.

Figure 2.3. Installing the Signal Conditioner

Step 3 Attaching the bracket, power cable, etc.

Attaching the bracket to the empty slot

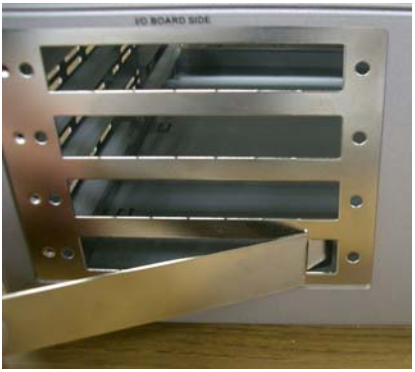


Figure 2.4. Attaching the brackets for front slots

Figure 2.5. Attaching the brackets for rear slots

⚠ CAUTION

Make sure that all the unused slot(s) are fitted with the bracket(s).

Connecting the power cable with this product

(1) Connect this product with the power cable.

Figure 2.6. Connecting the power cable with this product

(2) Connect the power cable to the wall outlet.

(3) Accidental removal of the AC cable can be prevented by securing it with the clamp for fixing AC cable that can be attached to the hole beside the cable connector.

⚠ CAUTION

Make sure that the power switch is OFF before connecting the power cable. Otherwise, this product may malfunction or cause a failure.

Fixing the Power Cable

Clamp for fixing AC cable is bundled with this product.

(1) Attach the tip of clamp for fixing AC cable to the hole above the AC inlet.

Figure 2.7. Attaching the clamp for fixing AC cable ***< 1 / 3 >***

(2) Apply the clamp for fixing AC cable to the power cable.

Figure 2.7. Attaching the clamp for fixing AC cable ***< 2 / 3 >***

(3) Move the clamp for fixing AC cable as close to the AC inlet as possible, then tighten the clamp to fasten the power cable.

Figure 2.7. Attaching the clamp for fixing AC cable ***< 3 / 3 >***

How to Attach the Rubber Feet

(1) Attach the rubber feet to the bottom side of this product by using screws, if necessary.

Figure 2.8. Attaching the rubber feet

How to Attach the Attachment Fittings

(1) The attachment fittings should be attached as shown below.

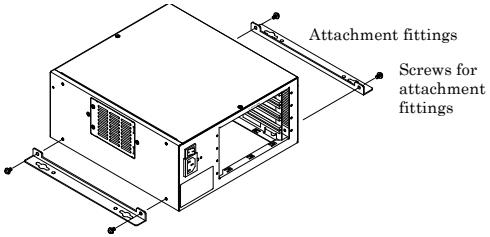


Figure 2.9. Attach the Attachment Fittings

⚠ CAUTION

Rubber feet and attachment fitting are mutually exclusive. Use either of them at a time depending on the operating condition.

Setup Troubleshooting

Please confirm followings when the ESC-4 does not work.

Symptoms and Actions

The chassis won't be turned on.

a. Make sure that the power cable has been connected correctly.

b. Make sure that the LED is turned on.

c. Make sure that the power supply of this product is on.

d. Make sure that you have followed the procedure in Chapter 2.

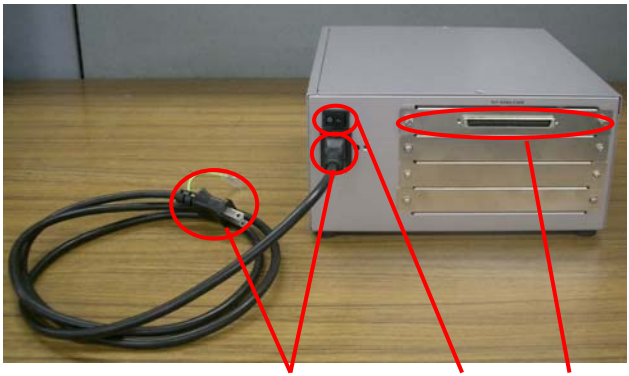
e. Even though the chassis is still not turned on, check whether it is turned on with no board installed.

No PCI board on this product is detected.

f. Make sure that the signal conditioner has been installed correctly.

g. Make sure that the connection cable has been installed correctly. When connecting the connection cable to the main chassis, insert the connector until it clicks into place.

h. Make sure that the POWER LED on this product is turned on.



3 About Hardware

Hardware specification

Table 3.1. Specification

Item	Specification
Number of user-available slots	4
Power capacity (Max.)	+5VDC 12A
AC input line voltage	100 - 240VAC
Input frequency	50/60Hz
Inrush current	25A Peak(100VAC), 50A Peak(200VAC)
Maximum total power capacity	60W
Physical dimensions (mm)	242(W) x 262(D) x 115(H) (No protrusions)
Weight	3000g

Table 3.2. Environmental specification

Item	Specification
Operating temperature	0 - 50ºC
Operating humidity	20 - 80%RH(No condensation)
Storage temperature	0 - 60ºC
Storage humidity	10 - 90%RH(No condensation)
Floating dust particles	Not to be excessive
Corrosive gases	None

⚠ CAUTION

The power supply and cooling fan in the ESC-4 is consumable, requiring replacement after use for a certain period of time. Although each of the parts should be replaced after use for the following period of time in principle, the life may be shortened depending on the operating environment. Keep in mind that the lives of the parts may be extremely shortened if they are used where it is either exposed to must dirt, metal chips or particles, or dust or affected by oil or corrosive gas.

- Power supply : About 5 years (in an office environment kept at a temperature of 25°C and a humidity of 60%)
- Fan : About 5 years (in an office environment kept at a temperature of 25°C and a humidity of 60%)

Physical dimensions

⚠ CAUTION

- When using this product, keep it at least 20mm away from any object such as the wall for cooling purposes.
- Attaching rubber feet to the chassis makes it 8mm taller.

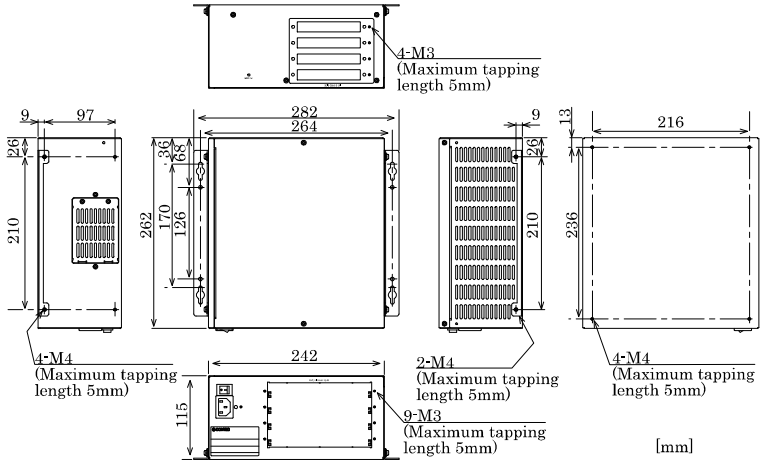


Figure 3.1. Physical dimensions

ESC-4

User's Manual

CONTEC CO., LTD.

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